

SOLENOID VALVE TYPE 160

Nominal size DN 15–50

Pressure range 0.3–6.0 bar

Features

- pilot operated thermoplastic valve
- high switching speeds
- core tube sealed by isolating diaphragm
- independent of compressed air supply lines
- due to the system design, a minimum differential pressure of 0.3 bar is required to ensure its perfect function

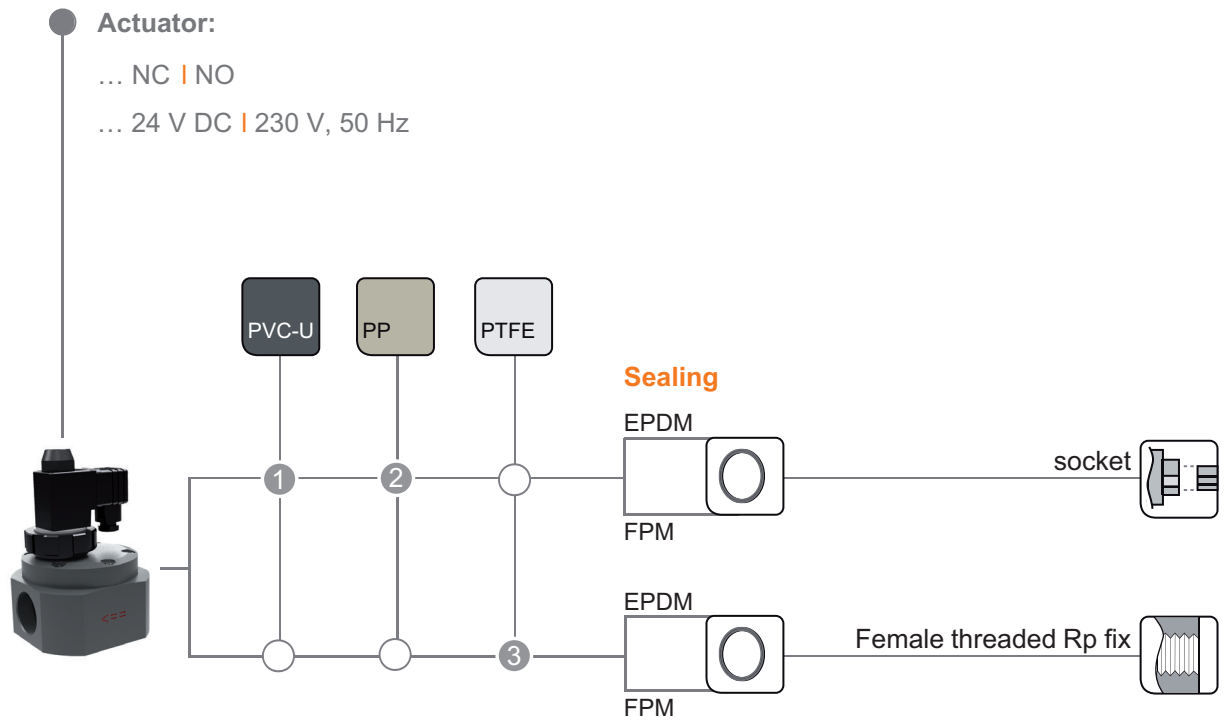
Additional options on demand

- Atex
- special voltages

www.asv-stuebbe.com/produkte/armaturen



Pictogram Solenoid valve type 160



● available
 ○ not available

Basic normal size:

DN 8	DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300	DN 350	DN 400
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Connectionmaterial (process connection)

- ① PVC-U socket DIN
- ② PP socket DIN
- ③ PTFE female thread Rp fix

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Use

- chemical plant engineering
- industrial plant engineering
- Water treatment

Application limits

- Not suitable for use in medium types containing solids (danger of servo bore being clogged)
- Not a complete alternative for classic shut-off valves such as a ball valve. If the differential pressure drops below 0.3 bar, there is insufficient pressure energy to close the valve. In the case of insufficient differential pressure, the valve may open in an uncontrolled manner

Application

- Quick-closing, electrically actuated valve
- Particularly suitable for implementing safety functions, as the switching function is supported by the medium
- for operating pressures between 0.3–6.0 bar
- A differential pressure of 0.3 bar must be applied under all operating conditions

Functions

- servo-controlled, closed when de-energized (NC)
- servo-controlled, open when de-energized (NO)
- The valve requires the pressure energy of the medium to open and close. The medium pressure or the pressure differential raises the sealing element. For this reason, a differential pressure of 0.3 bar must be applied.

Design

- Seat valve with diaphragm seal
- plunger chamber sealed

Flow medium

- Technically pure, neutral and aggressive fluids, provided that the selected valve materials are resistant at the operating temperature according to the ASV resistance guide.

ASV-Stübbe resistance guide

- www.asv-stuebbe.de/pdf_resistance/300051.pdf

Medium temperature

- See graphics „Pressure/temperature diagram“

Operating pressure

- PN 0.3–6.0 bar
- See graphics „Pressure/temperature diagram“

Viscosity

- up to approx. 38 mm² /s (cSt)

Housing

- PVC-U, PP, PTFE

Sealing element

- FPM, EPDM

Ambient temperature

- 0–50 °C (max.)

Connection

- PVC-U: socket end for solvent welding
- PP: fusion socket end
- PTFE: female threaded socket

Connector plug

- according to DIN EN 175301-803, shape A

Voltage

- 24 V DC
- 230 V, 50 Hz
- special voltages on request

Voltage tolerance

- +/-10% according to VDE 0580

Power consumption

- 230 V, 50 Hz: 6.5 VA
- 24 V DC: 5 W

Duty cycle

- 100 %

Manipulating time

- Opening: 30 ms – 150 ms
- Closing: 50 ms – 1 sec.

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Type of protection

- IP 65 with mounted connector plug
- ATEX II 2 G Ex m II T4 on request

Mounting position

- magnet preferably at the top

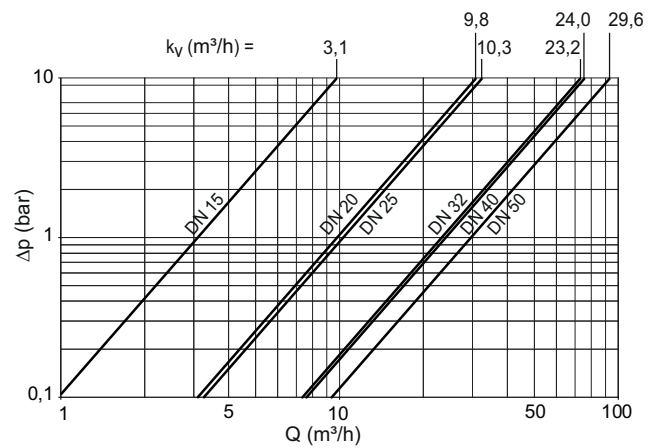
Options

- Special voltages

Attention

- For perfect function a differential pressure of min. 0.3 bar is necessary.

Pressure loss curve



Description	
Δp	Pressure loss
Q	Flow

Pressure loss and k_v value

The diagram shows the pressure loss Δp in relation to the flow Q .

Conversion formulas

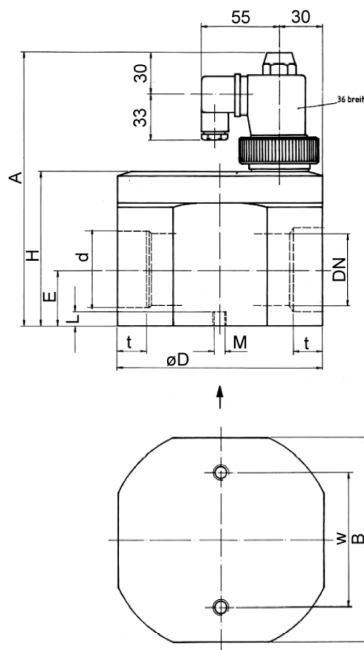
$$c_v = k_v / 0.865$$

Units

$$k_v \text{ [m}^3\text{/h]}$$

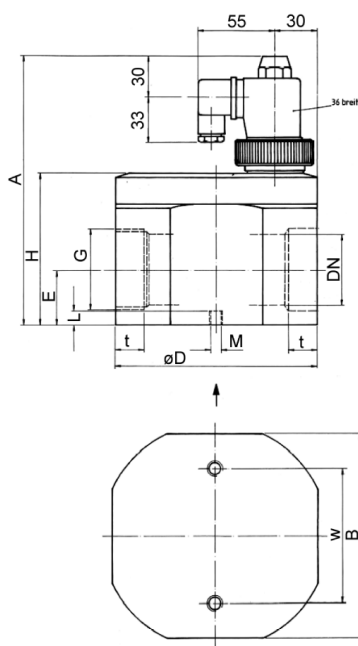
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Connection socket

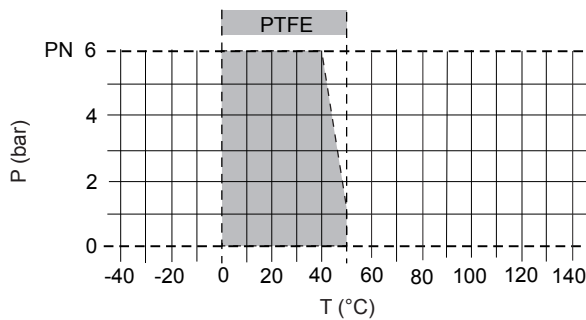
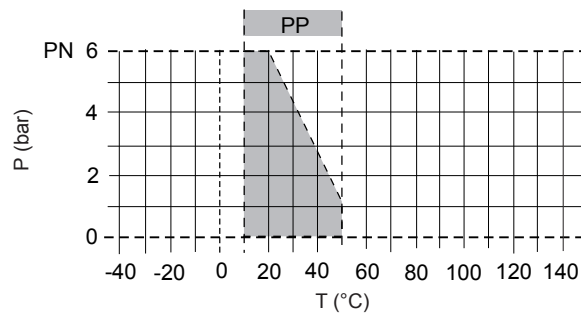
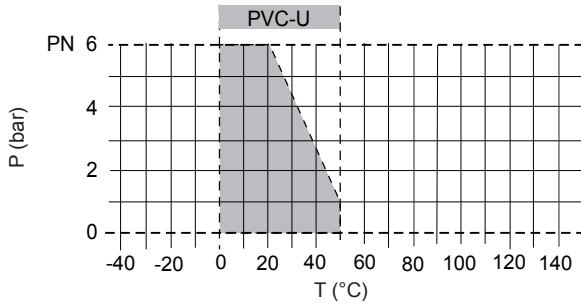


d (mm)	20	25	32	40	50	63
DN (mm)	15	20	25	32	40	50
DN (inch)	1/2	3/4	1	1 1/4	1 1/2	2
A	129.0	143.0	143.0	171.0	171.0	189.0
B	62.0	94.0	94.0	124.0	124.0	140.0
d	20.0	25.0	32.0	40.0	50.0	63.0
D	74.0	98.0	98.0	124.0	124.0	140.0
E	16.0	23.0	23.0	31.0	31.0	39.0
G*	1/2	3/4	1	1 1/4	1 1/2	2
H	49.0	63.0	63.0	91.0	91.0	109.0
L	6.0	10.0	10.0	12.0	12.0	12.0
M	M5	M6	M6	M8	M8	M8
t	14.5	16.0	16.0	20.0	20.0	20.5
w	40.0	60.0	60.0	80.0	80.0	90.0

all dimensions in mm / * dimensions in inch



Pressure/temperature diagram



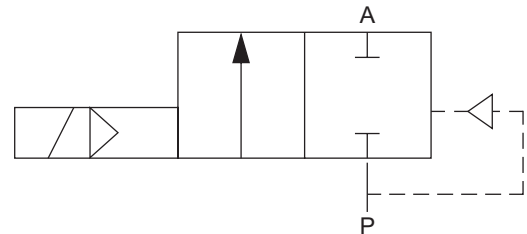
	Description
P	Operating pressure
T	Temperature

The pressure/temperature limits of the materials are valid for the stated nominal pressures and a service life of 25 years.

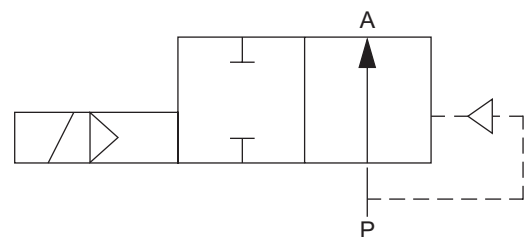
These values are guide values for flow medium types which do not negatively impact the physical and chemical characteristics of the valve material. It may be necessary to take diminution factors into consideration.

The operating life of the wear parts depends on the conditions of use.

NC circuit diagram (closed when de-energized)



NO circuit diagram (open when de-energized)

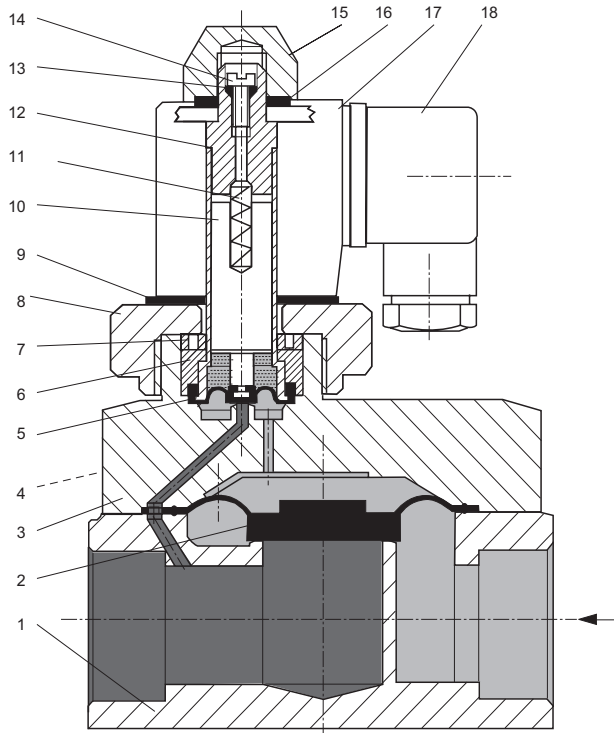


kv value

DN (mm)	15	20	25	32	40	50
kv (m ³ /h/mm)	3.1	9.8	10.3	23.2	24.0	29.6

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Components



Position	Quantity	Designation
1	1	valve body
2	1	Diaphragm
3	1	Cover
4	1	Screw
5	1	Pilot diaphragm
6	1	Pressure disc
7	1	Lift limitation
8	1	Union nut
9	1	Flat sealing ring
10	1	Plunger
11	1	Pressure spring
12	1	Plunger guide tube
13	1	O-ring
14	1	Oil screw
15	1	Cap nut
16	1	Flat sealing ring
17	1	Magnet coil
18	2	Connector plug